

CLASS 346, RECORDERS**SECTION I - CLASS DEFINITION**

This is generic class for apparatus and corresponding processes for:

A. Making a record of the movements of machines or instruments whose movements are desired to be recorded and at least temporarily preserved.

B. Making a record of any phenomenon capable of being detected either quantitatively or qualitatively and recorded for at least temporary preservation:

The preceding in general require (a) the means to make the record, (b) the means to detect qualitatively or quantitatively the movement or other phenomenon, and (c) the means actuated in accordance with the movement or other phenomenon to cause the record making means to function.

C. The record making means and its immediate actuating means as a subcombination of (A) and (B).

D. Watchmen's and workmen's time-recorders and time stamps.

This class also includes compartmented boxes adapted to receiving checks, means being provided either for manual operation or for clock work to shift a part so that a check will be received in a selected compartment. See Subclass References to the Current Class, below, identified as other classes for record-making.

- (1) Note. Organized apparatus significantly claimed combined with a recording means which records some quality or quantity related to such apparatus or its function, are for the most part classified in the class appropriate to the type of organized apparatus (see References to Other Classes, below.)

SECTION II - SUBCLASS REFERENCES TO THE CURRENT CLASS

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 27, for compartmented boxes adapted to receiving checks, means being provided either for manual operation or for clock work to shift a part so that a check will be received in a selected compartment.

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

- 8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, particularly subclasses 445+ for dye printing. (other class for record making, see (1) Note, Class Definition)
- 33, Geometrical Instruments, subclasses 18.1+ for scribes, subclasses 304+ for borehole direction or inclination indicators with recorders, subclass 331 for other direction sensing and indicating devices with recorders.
- 70, Locks, subclasses 433+ for locks with recorders.
- 73, Measuring and Testing, for recording means broad or specific combined with significant measuring or testing structure, and see subclasses; subclasses 181+, for recording ships' logs; subclass 312, for recording, float type, liquid level gauges; subclass 335.06, for a recording hygrometer; subclass 489, for recording means combined with a speed or acceleration responsive device; subclasses 570+, for apparatus having a recorder, for testing by vibrating the specimen; subclass 712, for recording fluid pressure gauges; subclass 862.27, for recording dynamometers.
- 84, Music, subclasses 461+ for devices for recording the movement of keys of a keyboard.
- 101, Printing. (other class for record making, see (1) Note, Class Definition)
- 116, Signals and Indicators, for nonrecording signals and indicators.
- 118, Coating Apparatus, will take organized systems including recording, only as relates to the transfer of a developed record-image by a Class 118 coating means. Means to develop a latent image by a Class 118 coating device will not exclude placement in Class 346. (other class for record making, see (1) Note, Class Definition)
- 137, Fluid Handling, subclasses 551+ for fluid handling apparatus combined with a recorder. (other class for record making, see (1) Note, Class Definition)
- 177, Weighing Scales, subclasses 2+ for a recording weigher.

- 178, Telegraphy, for telegraph systems and receivers having a recorder, particularly; subclasses 4+, for automatic printing systems; subclasses 18+, for writing systems; subclasses 23+, for nonautomatic printing systems; subclasses 36+, for printing receivers; subclasses 62, for chemical recording; subclasses 89+, for code recorders.
- 181, Acoustics, subclass 122 for mechanical seismographs.
- 194, Check-Actuated Control Mechanisms, for combinations of recorder with significant check-controlled apparatus.
- 205, Electrolysis: Processes, Compositions Used Therein, and Methods of Preparing the Compositions, subclasses 52+ for electrolytic marking. (other class for record making, see (1) Note, Class Definition)
- 221, Article Dispensing, subclasses 2+. (other class for record making, see (1) Note, Class Definition)
- 222, Dispensing, subclasses 23+ particularly subclass 30 for dispensers combined with recorders.
- 232, Deposit and Collection Receptacles, subclass 18 for letter boxes having recorders.
- 235, Registers, subclasses 2+ for cash registers having a recorder; subclasses 4+, for cash recorders; subclasses 50, for recording voting machines; subclasses 58+, for calculators having means to record either or both the factor entered or the result.
- 236, Automatic Temperature and Humidity Regulation, for significant systems of this type combined with a recorder.
- 246, Railway Switches and Signals, subclass 107, for block signal systems having recorders; subclass 123, for systems for recording the time at which a train passes a given point. subclass 185, for means for actuating either signals or controls upon a train in combination with means to record the signal or control information.
- 250, Radiant Energy, subclass 315.3 for invisible radiation xerography; and subclasses 580+ for photography using invisible radiation. (other class for record making, see (1) Note, Class Definition)
- 250, Radiant Energy, subclasses 250+ for the detection of invisible radiation or the testing of material by invisible radiation and the recording of the results of the detection or the test.
- 273, Amusement Devices: Games, subclasses 138.1+ for recording chance devices.
- 318, Electricity: Motive Power Systems, subclasses 567+ for program or pattern controlled electric motive power systems, even though making the record is also claimed.
- 324, Electricity: Measuring and Testing, appropriate subclasses for electrical testing systems having a recorder combined therewith where no significant recording structure is involved. This Class (346) should be searched for the combination of electrical testing systems and a significant recorder.
- 331, Oscillators, subclass 44 for electric oscillators wherein means are provided for calibrating the tuning position indicator or dial of the oscillator by marking the indicator or dial in accordance with the results of the comparison of the generated frequency with the known frequency settings of a source of standard frequencies.
- 352, Optics: Motion Pictures, for motion picture recording apparatus. (other class for record making, see (1) Note, Class Definition)
- 356, Optics: Measuring and Testing, for devices which utilize visible light or test visible light to measure optical properties of light or substances, distance, velocity, direction, angles, areas or volumes and which may use a recorder to make a permanent record of the test. See subclasses 300+ of Class 356 for the line between Classes 346 and 356. (other class for record making, see (1) Note, Class Definition)
- 358, Facsimile and Static Presentation Processing, subclasses 296 through 304 for facsimile system shaving a recording apparatus.
- 367, Communications, Electrical: Acoustic Wave Systems and Devices, subclasses 14+ for electrical seismographs and appropriate subclasses for recording signaling systems.
- 369, Dynamic Information Storage or Retrieval, for making a record of information which requires dynamic reproduction to recover the stored information. (other class for record making, see (1) Note, Class Definition)
- 374, Thermal Measuring and Testing, subclass 186 for a thermometer combined with a detailed recording arrangement.
- 378, X-Ray or Gamma Ray Systems or Devices, subclasses 4+ and 21+ for X-ray tomography; subclasses 28+ for X-ray xeroradiography; subclasses 167+ for photographic detector supports; and subclasses 189+ for nonphotographic detector supports. (other class for record making, see (1) Note, Class Definition)

- 379, Telephonic Communications, subclasses 111 through 141, for recorders for counting or charging telephone calls or connections combined with telephone systems or equipment; subclasses 245-249, for telephone calling number recorders.
- 386, Television Signal Processing for Dynamic Recording or Reproducing, subclasses 1+ and 46+ for television camera combined with video apparatus for recording or reproducing processed television signal.
- 396, Photography, appropriate subclasses for a photographic camera or photographic fluid treating apparatus. (other class for record making, see (1) Note, Class Definition)
- 399, Electrophotography, subclasses 9+ for diagnostics, subclasses 38+ for controls, subclasses 130+ for image formation, subclasses 168+ for charging, subclasses 177+ for exposure, subclasses 222+ for development, subclasses 297+ for transfer, subclasses 320+ for fixing, subclasses 343+ for cleaning, and subclasses 361+ for document handling. (other class for record making, see (1) Note, Class Definition)
- 400, Typewriting Machines. (other class for record making, see (1) Note, Class Definition)
- 422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclasses 50+ for chemical analytical and analytical-control apparatus involving recording means.
- 428, Stock Material or Miscellaneous Articles, subclasses 411.1+ for a composite, nonstructural web or sheet characterized solely by the compositions of the layers, and which may be useful as carbon or transfer paper, and especially subclasses 488.1, 537.1, and subclass 914 (a cross-reference art collection) for a transfer sheet. (other class for record making, see (1) Note, Class Definition)
- 430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof. (other class for record making, see (1) Note, Class Definition)
- 434, Education and Demonstration, subclass 47 for aircraft trainers combined with recorders.
- 436, Chemistry: Analytical and Immunological Testing, subclasses 1+ for chemical analytical and analytical-control processes involving recording steps.
- 505, Superconductor Technology: Apparatus, Material, Process, subclasses 150+ for high temperature ($T_c > 30$ K) superconducting devices, and particularly subclasses 170+ for

information storage or retrieval systems, or recording.

- 600, Surgery, subclasses 523+, 544+, and 900 for recorders associated with medical diagnostic apparatus.

SUBCLASSES

- 2 Recorders forming part of a sextant, theodolite or other optical angle measuring device to record the observed angle.

SEE OR SEARCH CLASS:

- 356, Optics: Measuring and Testing, subclasses 138+ for angle measuring devices.

- 3 Recorders which exhibit the performance of a steam, gasoline or other expansible gas engine in terms of multiple parts of the engine or of a part operative in synchronism with the engine, i.e., one function of the engine (e.g., spark) should be plotted against another function of the engine (e.g., shaft rotation).

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 45+, for other plural function recorders.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclass 115 for apparatus for testing engine performance or efficiency having means to record.

- 4 This subclass is indented under subclass 3. Recorders of the type specified in ... in which one element of the recorder is responsive to pressure existing within the engine cylinder.

- (1) Note. Many of the indicators in this subclass use a long traveling paper web, upon which a time graph is drawn as paper is reeled past recording stylus.

SEE OR SEARCH THIS CLASS, SUBCLASS:

- 72, for recorders having a marker responsive to the expansion of a chamber.

SEE OR SEARCH CLASS:

73, Measuring and Testing, subclasses
700+ for fluid pressure gauges, particularly subclass 712 for recording type.

- 5 This subclass is indented under subclass 4. Recorders of the type specified in ... in which the record is made on a rotatable or oscillatable cylinder about which is wrapped a web sufficiently long to be wrapped but once there-around.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

138, and see the notes thereto for other recorders having drum type receivers.

- 6 This subclass is indented under subclass 5. Recorders of the type specified in ... in which a Bourdon tube is utilized to drive the marker element of the recorder.

SEE OR SEARCH CLASS:

73, Measuring and Testing, subclasses
741+ for Bourdon fluid pressure gauges.
92, Expansible Chamber Devices, appropriate subclasses for an expansible chamber device, per se.

- 7 Recorders having a record tracer portion operative upon a record receiver, said tracer portion being responsive to the motion of a tine of a tuning fork, or to the change in inclination of a body carrying a pendulous mass or to the displacement of a mass due to shocks or accelerations.

SEE OR SEARCH CLASS:

33, Geometrical Instruments, subclasses
308+ for pendulum directed recorders utilized in indicating borehole inclination and subclass 331 for direction sensing and indicating devices utilizing a recorder.
73, Measuring and Testing, subclasses
570+ for a test of vibration, or involving vibration of the test specimen; subclass 489 for an accelerometer with recording means; and subclasses 514+ for an accelerometer, per se.
84, Music, subclass 457 for tuning forks.

- 181, Acoustics, subclass 122 for mechanical seismographs.
324, Electricity: Measuring and Testing, subclass 162 for electrical accelerometers.
367, Communications, Electrical: Acoustic Wave Systems and Devices, subclasses 14+ for electrical seismographs.

- 8 Recorders responsive to the direction assumed by a translating member to record either the direction assumed by that member or the rectangular components of direction assumed by that member. These recorders are usually mounted on a transporting member and are responsive to extent of motion of that member as well as to direction assumed by that member and the recorder may be associated with sundry other devices such as compasses, signals and time stamps. Included are devices that record deviation (i.e., left or right) from a set course, rudder position, steering wheel position, etc.

SEE OR SEARCH CLASS:

33, Geometrical Instruments, subclasses
775+ for means for measuring distance by means of a rolling contact.
40, Card, Picture, or Sign Exhibiting, subclasses 482+ for means for automatically moving a sign or map in accordance with the rotation of an axle.
73, Measuring and Testing, subclasses
178+ for navigating instruments particularly 181+ for recording ships' logs.
434, Education and Demonstration, subclass 47 for aircraft trainers combined with recorders or for such recorders, per se, when particularly adapted for making a record of the operation of such trainers.

- 9 Recorders of the printing or perforating type having a part positioned in response to the position of a weighing member.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

40, for recorders operated by the weight of an individual or object thereon or passing thereover.

- 78+, and see the notes thereto for other print, dotting or punching markers.
- SEE OR SEARCH CLASS:
177, Weighing Scales, subclasses 2+ for a recording weigher.
- 10** This subclass is indented under subclass 9. Recorders of the type in which the part positioned in response to the position of the weighing member is geared to the load bearing member and is a part of the recording means.
- 11** This subclass is indented under subclass 9. Recorders of the type in which a recorder controlling element is movable independently of the weight responsive member and in which the weight responsive member exercises a control over the recorder control element or the recording mechanism associated therewith to cause proportional motion.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
9, for recorder elements which are merely positioned manually opposite a weight responsive indicator and in which no control is exercised by the indicator, or parts movable therewith.
31, for recorders with follow ups.
- 12** This subclass is indented under subclass 11. Recorders of the type in which the recorder controlling element moves about the same axis as the weight responsive member or co-linearly therewith.
- 13** Recorders combined with means, other than the necessary elements to make a record, to integrate two or more quantities, the result of the integration being indicated but not recorded.
- SEE OR SEARCH CLASS:
235, Registers, for integrators, per se.
- 14** Recorders combined with means, other than the necessary elements to make a record, to register the number of occurrences of a phenomenon. Included herein are combinations of recorders with electric meters and the like.
- SEE OR SEARCH CLASS:
235, Registers, subclasses 2+ for combined cash registers and recorders, subclasses 4+ for cash recorders subclass 50 for recording voting machines and subclasses 58+ for calculators having means to record either or both the factors entered or the result, and other appropriate subclasses for nonrecording registers.
- 15** Marking recorders combined with fare or passenger registers.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
97, for fare or passenger register character recording by dotting, printing or punching.
- SEE OR SEARCH CLASS:
235, Registers, subclass 33 for fare registers, per se.
- 16** This subclass is indented under subclass 15. Recorders of the type combined with a nonrecording indicator or alarm mechanism.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
17, for nonrecording indicator or alarm in other combinations.
- SEE OR SEARCH CLASS:
116, Signals and Indicators.
340, Communications: Electrical, appropriate subclasses for miscellaneous electrical signaling systems and signals.
- 17** This subclass is indented under subclass 16. Recorders combined with a nonrecording indicator or alarm not already provided for in ...
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
16, for nonrecording indicator or alarm combined with a nonrecording fare register.
- SEE OR SEARCH CLASS:
116, Signals and Indicators.

- 340, Communications: Electrical, appropriate subclasses for miscellaneous electric signaling systems or signals.
- 18** This subclass is indented under subclass 17. Recorders of the type in which the nonrecording indicator or alarm is speed responsive.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
150.1, for centrifugal governor responsive markers.
- SEE OR SEARCH CLASS:
73, Measuring and Testing, subclass 489 for recorders with a speed or acceleration indicator. See (3) Note in the class definition of Class 346 for the line with Class 73.
74, Machine Element or Mechanism, subclass 12 for means to take off power from a main power line to operate speedometers.
116, Signals and Indicators, subclasses 37+, 57, 62.1+, and 74 for signals and alarms that are speed actuated.
324, Electricity: Measuring and Testing, subclasses 160+ for electrical speed measuring and indicating.
340, Communications: Electrical, subclasses 670+ for electric signaling or alarm systems automatically responsive to speed.
- 19** Recorders combined with other means whereby a second record may be made on a record receiver by means of a freely movable implement, which implement is a unit normally independent of the recorder and which implement is solely under control of an operator, except that the recorder is provided with an opening over the record receiver to delimit the area in which said second record may be made.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
26, for autograph as sole record.
- SEE OR SEARCH CLASS:
281, Books, Strips, and Leaves.
462, Books, Strips, and Leaves for Mani-folding.
- 20** Recorders combined with clock mechanism in which there are time scale and indicator means.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
26, for time driven recorder elements with autograph as sole record.
30, for time driven recorder elements also driven by a second factor.
53, for time recording, where a second function is also recorded on the same record receiver by a second marker, the markers being under control of an element normally unconnected with the apparatus (e.g., a key), a marker being of the dotting, printing or punching type.
55, for time driven record receiving element, where two or more functions are recorded thereon by markers under control of an element normally unconnected with the apparatus (e.g., a key), a marker being of the dotting, printing or punching type.
57, for time driven record receiving element, where two or more functions are recorded thereon, where an element normally disconnected from the apparatus is used to make a printing, dotting or punching mark on the receiving element.
58, for time recording, where second function is recorded by second marker on same receiver, where an element normally disconnected from the apparatus is used to make a dotting, printing or punching mark on the receiver.
59+, for time recording, where a second function is recorded on the same receiver, dotting, printing, or punching markers being used.
64, for time driven record receiver, where a single marker records two or more functions, the marker being controlled by an element normally unconnected with the apparatus.
80+, for time recording utilizing a dotting, printing or punching marker.
86, for time controlled mechanism, used to shift a holder for a separate record receiver card so that when the card is inserted in the machine at different

- times, superimposed dotting, printing or punching records are avoided.
- 114+, for time driven record receiving web, there being a "writer" type marker.
- 115, for time driven "writer" type marker, with time driven record receiving web.
- 121+, for time driven record receiving disc, there being a "writer" type marker.
- 127+, for time driven record receiving drum, there being a "writer" type marker.
- 142, for hand time stamps.
- 21** Recorders provided with means to delete the record.
- SEE OR SEARCH CLASS:
- 510, Cleaning Compositions for Solid Surfaces, Auxiliary Compositions Therefor, or Processes of Preparing the Compositions, subclass 174 for compositions for removing ink or writing fluid markings, such as ink eradicators.
- 22** Recorders provided either with deposit receptacles to receive individual units of a record or units on which records are made or with a chute through which the record receiver passes from mouth to exit opening, a record being made in the interim.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 27, for selective compartments to receive checks.
- 48, for plural record receivers in a magazine, with mechanism for moving one to a position to receive a record.
- SEE OR SEARCH CLASS:
- 232, Deposit and Collection Receptacles.
- 23** Recorders combined with means to make a reference line on the record receiver.
- 24** Recorders combined with means to sever or facilitate severing of the completed record from the supply of record receiving material.
- SEE OR SEARCH CLASS:
- 83, Cutting, appropriate subclasses for the severing subcombination.
- 225, Severing by Tearing or Breaking, appropriate subclasses for the record tearing subcombination.
- 242, Winding, Tensioning, or Guiding, subclasses 522+ for cutting elongated material and subsequent convolute winding.
- 25** Recorders combined with nonrecording devices other than those provided for in preceding subclasses.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 33+, for recorders combined with means the functioning of which is to be recorded.
- 26** Recorders wherein there is a record receiver utilizing a time driven element to receive a mark, or wherein a time driven element is utilized to control the application of a mark to the record receiver, with which receiver is adapted to cooperate an implement, normally independent of the recorder, and which implement is solely under control of an operator except that the recorder is provided with an opening over the record receiver to delimit the area in which a record may be made.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
- 19, for autograph recording combined with other recording.
- 20, and see the notes thereto for timing subclasses in this class.
- SEE OR SEARCH CLASS:
- 281, Books, Strips, and Leaves.
- 462, Books, Strips, and Leaves for Manifolding.
- 27** Compartmented boxes adapted to receive checks, means being provided either by manual operation or by clockwork to shift a part so that checks will be received in successive compartments.
- (1) Note. For the most part there is a recorder as part of the combination.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 22, for record receiver deposit receptacles.
 48, for record receiver magazine and means for moving a receiver to a position to receive a mark.
- 28** Recorders wherein the sole means for obtaining the record of a function is determined by the length of a web advanced at a rate proportioned to the function. The web may have pre-printed indicia thereon.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 136, and see the notes thereto for other web subclasses.
- 29** Recorders wherein one of the recording elements is responsive, concurrently to two or more functions, such as amperes and volts or kva, or kw. or fuel consumption and quantity of steam produced, or two pressures.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 3+, for recording plural functions of steam and gas engines.
 45+, for making records of two or more functions, which records may be distinguished from each other, particularly subclasses 62+, where a single marker and single record receiver are involved.
- 30** This subclass is indented under subclass 29. Recorders of the type wherein one of the functions is time. There may be more than two functions controlling the motion of the recording element.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 20, and see the notes thereto for timing subclasses in this class.
- 31** Recorder mechanisms in which there is a function responsive element, a recorder controlling element, and a recorder element controlled thereby, said controlling element being movable by means independent of the means employed for controlling the function responsive element, and in which the controlling element assumes a position determined by the condition of the function responsive element.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 11, for weight responsive members with mechanism to control a movable recorder element to cause proportional motion.
 32, for rebalancing systems.
- SEE OR SEARCH CLASS:
 74, Machine Element or Mechanism, subclass 388 for follow-up gearing.
 91, Motors: Expansible Chamber Type, subclasses 358+ for expansible chamber motors having working member position feedback control.
 114, Ships, subclass 144 for follow-up ship steering.
 236, Automatic Temperature and Humidity Regulation, subclasses 74+ for regulating systems having electrical follow-ups.
 244, Aeronautics, subclasses 76+ for follow-up aircraft steering.
 303, Fluid-Pressure and Analogous Brake System, subclass 54 for follow-up fluid pressure brake valves.
 318, Electricity: Motive Power Systems, subclasses 560+ for electric motor servomechanisms.
 340, Communications: Electrical, subclass 870.43 for telemetric systems having follow up.
- 32** Recorder mechanism embodying a function responsive element which moves in either of two opposite directions from a normal or balanced position in accordance with the change in the function and which controls the movement of a mechanism to restore or rebalance the element to its normal position, the mechanism in its restoring operation effecting the shifting of a recorder element.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 31, for follow-up systems and see the notes thereto.
- 33** Recorders combined with the means the functioning of which is recorded.

- (1) Note. Where a functioning means is claimed broadly as operating a specific recorder, the patents are classified in an appropriate subclass in this class and which subclass includes the structure of the specific recorder.
- (2) Note. Where both the functioning means and the recorder are claimed broadly or where modifications of the functioning means are claimed to adapt it to its recording operation or where specific interconnecting structure between the functioning means and the recorder are claimed, the patents are classified in this and in indented subclasses.
- (3) Note. For the most part, art devices significantly claimed combined with means to record one or more aspects of the operation thereof, are classified with the art device, see the notes to the class definition.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 25, and preceding subclasses for recorders combined with nonrecording devices.
- 72, for float or expansible chamber operated recorders.
- 73, for centrifugal governor operated recorders.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclasses 152.02+ for a process or an apparatus for borehole formation logging wherein the logging is not a purely electrical or a purely magnetic test and subclass 152.62 for a combination of a recorder and an apparatus for testing a pump for use in a borehole test or a drilling test wherein the test is not a purely electrical or a purely magnetic test.
- 374, Thermal Measuring and Testing, subclass 186 for recording thermometers having significantly claimed measuring and recording features.

- 34 This subclass is indented under subclass 33. Recorders of the type wherein a record may be made by the same recording means from more than one independently operating operator. The recording couple may include a member with changeable marker.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 29, for single recorder elements driven by two or more factors.
- 44, for plural recorders.
- 45+, for recording two or more functions, the records being distinguishable from each other.

- 35 This subclass is indented under subclass 33. Recorders of the type wherein a record of a single function is made, whether of magnitude or position, and wherein a series of markers operative on a surface is involved, one or more of these markers being selected in accordance with the magnitude of the function or the position of the part.

- 36 This subclass is indented under subclass 33. Recorders of the type wherein the record is one of valve operation and is produced by or upon movement of the valve.

SEE OR SEARCH CLASS:

- 137, Fluid Handling, subclasses 553+ particularly subclass 556 for valves and other fluid handling apparatus combined with a recorder.
- 251, Valves and Valve Actuation, appropriate subclasses for valves not otherwise provided for.

- 37 This subclass is indented under subclass 33. Recorders of the type wherein the functioning means is a tuning member of a radio receiver.

SEE OR SEARCH CLASS:

- 74, Machine Element or Mechanism, subclasses 10+ for mechanical tuners (dial shaft operators).
- 116, Signals and Indicators, subclasses 241+ for radio dials.
- 192, Clutches and Power-Stop Control, subclass 138 for limit of travel stop dial setters.

- 318, Electricity: Motive Power Systems, for systems of electric motor control usable to tune radios.
- 334, Tuners, appropriate subclasses for tuners involving circuit resonance varying elements.
- 361, Electricity: Electrical Systems and Devices, subclasses 287+ for variable condensers.
- 38** This subclass is indented under subclass 33. Recorders of the type wherein the functioning means is a gun, fuse, torpedo or other mechanism relating to ordnance.
- SEE OR SEARCH CLASS:
 42, Firearms.
 89, Ordnance.
 102, Ammunition and Explosives.
 114, Ships, subclasses 20.1+ for marine, self propelled torpedoes.
- 40** This subclass is indented under subclass 33. Recorders of the type wherein the functioning means is a member depressible by the weight of an individual or article on the member or passing thereover.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 9+, for printing or perforating recorders having a part positioned in response to a weighing member.
- SEE OR SEARCH CLASS:
 177, Weighing Scales, subclasses 2+ for a recording weigher.
 235, Registers, subclass 99 for those having a seat, platform or the like operated by the weight of a person or article.
- 41** This subclass is indented under subclass 33. Recorders of the type wherein the functioning means is a part connected with the operation of the opening of a cover of a box or instrument so as to make a record of the movement of a part associated with the act of opening the cover.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 144, for the key or box used by a workman or watchman in the course of making a record.
- SEE OR SEARCH CLASS:
 70, Locks, subclasses 433+ for locks with recorders.
- 42** This subclass is indented under subclass 33. Recorders of the type wherein the functioning means is a gate, door or turnstile.
- SEE OR SEARCH CLASS:
 235, Registers, subclass 93 for those that are gate or turnstile operated.
- 43** This subclass is indented under subclass 33. Recorders of the type wherein the functioning means is a part which is utilized to cause a dispensing of fluid by a pump.
- SEE OR SEARCH CLASS:
 222, Dispensing, subclass 30 for dispensers with recorders.
- 44** Plural recorders including recorder mechanisms wherein there is provided a recorder comprising a record producing marker or equivalent instrumentality and a record receiving medium together with another recorder mechanism comprising still another record producing marker or equivalent instrumentality and another record receiving medium.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 45+, for plural function recorders, and see the notes thereto.
- 45** Recorders for making records of two or more functions which records may be distinguished from each other.
- (1) Note. This subclass and indented subclasses are predicated on the assumption that a preliminarily hand set day or advertising printer, punch, or the like is not a recorder within the means of this group of subclasses. Thus a patent disclosing a stamp with hand preset type representing month, day, and year oper-

ating in conjunction with a printing register which changes automatically in accordance with the number of passengers in a car is not regarded as for a plural function recorder. However, if in this combination, the date stamp were operated by clockwork, the patent would be classified in an indented subclass. The record of a conductor's identification key utilized with a recording register is regarded as a plural function record within the meaning of an indented subclass. So too is the record of times of arrival and departure of a plurality of workmen and where extra distinctions are made of late arrival in addition to time indication the record is regarded as for two functions.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 3+, for recording plural functions of steam and gas engines.
- 29+, where one recorder element is driven by two or more factors.
- 34, for two or more external operating means for a recorder.

SEE OR SEARCH CLASS:

- 358, Facsimile and Static Presentation Processing, subclasses 296 through 304 for facsimile recorders that may have multiple recording styli.

- 46** Recorder mechanism for making plural function records wherein the records are distinguishable from one another by different colors.
- 47** This subclass is indented under subclass 46. Recorder mechanism of the type wherein the two color records are of workmen's time, as early and late arrival; normal working time and overtime; arrival in one color and departure in another.
- 48** This subclass is indented under subclass 45. Mechanism of the type wherein a magazine is provided for retaining individual record receivers and further mechanism is provided for bringing one of the record receivers to position for receiving a record or records.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 22, for combinations of a deposit receptacle to which the record receiver is delivered.
- 27, for selective compartments to receive checks.

- 49** Plural record mechanism wherein there is provided a single record receiver with a plural number of markers for making records on the record receiver, each marker recording a function different from another marker.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 35, for recorders where a single record is made, there being plural markers operated by a single external means.

- 50** This subclass is indented under subclass 49. Recorders of the type wherein at least one of the markers is a printer, dotter, or punch, i.e., the marker has solely a rectilinear motion toward and from the plane of the record receiver to make the mark.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 78+, and see the notes thereto for other recorders using dotting, printing, or punching.

- 51** Plural function recorders involving the use of printing, dotting, or punching markers and a single record receiving element wherein there is a number of selectable levers, push buttons, or equivalent devices mounted on the recorder or mechanically, not electrically connected thereto, any one of which may be selected to control the printing, dotting or punching on the record receiving element. The selection may be effected by shifting a manually operated member common to a group of levers or buttons to cooperate with a selected one of the group.
- 52** Plural records involving the use of printing, dotting, or punching markers and a single record receiving element, wherein the markers are under selective control of an element normally unconnected with a recording apparatus, e.g., a key usually carried in one's pocket.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
56+, and 63+, for other discrete element control.
82+, and 95+, for discrete record receiving cards.
- 53** This subclass is indented under subclass 52. Recorders of the type wherein one of the recordings is that of clock time where such clock time is designated by digits or by index and clock dial. This subclass also includes clock driven dating recorders.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for timing subclasses in this class.
- 54** This subclass is indented under subclass 52. Recorders of the type wherein one of the recordings is that of the characters from a register. An elapsed time register, i.e., one that does not read true time, is regarded as a register and not as a clock.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
60, 61 and 94+, for other register character recorders.
- 55** This subclass is indented under subclass 52. Recorders of the type wherein the record receiving element is driven in accordance with time.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for timing subclasses in this class.
- 56** Plural record recorders involving the use of a plural number of printing, punching, or dotting markers and a single record receiving element wherein an element normally disconnected from the apparatus is utilized as a marker to make a printing, dotting or punching mark on said record receiving element.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
52+, and 63+, for other discrete element control.
- 82+, and 95+, for discrete record receiving cards.
- 57** This subclass is indented under subclass 56. Recorders of the type wherein the record receiver is time driven.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for timing subclasses in this class.
- 58** This subclass is indented under subclass 56. Recorders of the type wherein there is also involved a recording of clock time, which clock time must be indicated either by the use of digits or by indicator and clock dial.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for timing subclasses in this class.
- 59** Plural record markers involving the use of a plural number of printing, dotting or punching markers and a single record receiving element wherein one of the recordings is of clock time, said recording being in the form of digits or indicator and clock dial. A marker making a "late" record indication on a card is regarded as one of the markers within the definition.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for timing subclasses of this class.
- 60** This subclass is indented under subclass 59. Recorders of the type wherein a further recording is made of the characters from a register. The register may step up in response to signals from a watchman's or other transmitter to identify the particular transmitter, or in response to the increase in a magnitude. A pointer which oscillates back and forth in accordance with a variation in magnitude is not a register.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
54, 61 and 94+, for other register character recorder.
- 61** Plural record markers involving the use of printing, dotting or punching markers and a

- single record receiving element wherein one of the records is that of the characters from a register.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
54, 60 and 94+, for other register character recorders.
- 62** Plural function recorders wherein the record is effected by the use of a single marker and single record receiver. The plural functions may be denoted, for example, by differences in direction of the record or by differences in the position of the record relative to the record receiver or by differences in angular position of the mark on the record receiver, e.g., a scribe may make a mark in one direction for one function, and in another direction for another function. A workman may shift a time operated functioned printing wheel to his workman position on a sheet.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
29+, where one recorder element is driven by two or more factors.
- 63** This subclass is indented under subclass 62. Recorders of the type wherein the marker is displaced with reference to the record receiving surface in accordance with the conformation of a discrete element (i.e., an element normally unconnected with the recorder) inserted into the recorder.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
52+, and 56+ for other discrete element control.
82+, and 95+ for discrete record receiving cards.
- 64** This subclass is indented under subclass 63. Recorders of the type wherein the record receiver is time driven.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for timing subclasses of this class.
- 65** Single function recorders with record receiving means having a single set of scalar lines on which individual record points are interpretable as having different values, said recorder also having record making means to designate the interpretation to be given to a particular record point.
- 66** Single function recorders wherein there is provided either a plural number of record receivers to wherein there is provided a single receiver which may be subsequently divided into a plural number of pieces and which recorders make simultaneous records which are either in duplicate or in some proportion relative to one another.
- (1) Note. Where the record receiver is a single element and intended to be severed, each piece will contain a complete record.
- (2) Note. This subclass also includes recorders providing for a plurality of simultaneous records of the same function made in different manner as by printing and punching or as by writing and printing.
- 67** This subclass is indented under subclass 66. Recorders of the type wherein but a single marker is employed. Usually the records are carbons of one another, or are records made by a stylus piercing a number of superposed record receivers.
- 68** Recorders wherein the marker is automatically displaced from record making position when the record receiving element is removed from its record receiving position.
- 69** Means to vibrate the whole recorder or a record effecting portion thereof to prevent sticking together of the marker and receiver.
- 70** Recorders with automatic means to shift the marker to change its zero position as the paper zero position shifts, as due to change in size of paper as the humidity changes.
- 71** Recorders wherein a marker makes an undulating record of constant amplitude.
- 72** Recorders wherein a marker is responsive to the movement of a float or the expansion of a chamber.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 4+, for recording plural functions of gas or steam engines, where one element of the recorder is responsive to pressure in the engine cylinder.
- 33+, for recorders having external operating means.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclass 312 for recording, float type, liquid level gauges; subclass 322.5 for floats, per se, and subclass 712 for recording fluid pressure gauges.
- 92, Expansible Chamber Devices, appropriate subclasses for an expansible chamber device, per se.
- 137, Fluid Handling, subclass 557 for fluid handling apparatus combined with fluid pressure responsive recorders, subclass 558 for liquid level responsive recorders.

- 73** Recorders wherein a marker is responsive to a speed responsive device of the centrifugal governor type.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 18, for recorders combined with nonrecording speed indicator or alarm, and see the notes thereto.
- 33+, for recorders having external operating means.

SEE OR SEARCH CLASS:

- 73, Measuring and Testing, subclasses 535+ for a speed responsive device of the centrifugal weight type, per se.
- 399, Electrophotography, for electrostatic photocopying.

74.2 MAGNETOGRAPHIC:

This subclass is indented under the class definition. Subject matter wherein a magnetic field pattern in pictorial or s:graphic form is recorded on a magnetic medium for visible display, as by development, by toning, or other techniques.

SEE OR SEARCH CLASS:

- 358, Facsimile and Static Presentation Processing, subclass 296 for the subject matter of this subclass in combination with a facsimile.
- 360, Dynamic Magnetic Information Storage or Retrieval, appropriate subclass for magnetic recording not intended to be rendered directly visible.
- 361, Electricity: Electrical Systems and Devices, subclasses 193+ for magnetizing or controlling magnetic fields.
- 399, Electrophotography, subclasses 9+ for diagnostics, subclasses 38+ for controls, subclasses 130+ for image formation, subclasses 168+ for charging, subclasses 177+ for exposure, subclasses 222+ for development, subclasses 297+ for transfer, subclasses 320+ for fixing, subclasses 343+ for cleaning, and subclasses 361+ for document handling.

74.3 Physical reorientation of magnetic particles:

This subclass is indented under subclass 74.2. Subject matter including physically rearranging particulate magnetic material within a record by application of a magnetic field thereto, thereby altering the reflective nature of the medium to produce the visible image.

74.4 Radiation sensitive:

This subclass is indented under subclass 74.2. Subject matter wherein light or other radiation, including heat, forms the image by magnetizing or demagnetizing a surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

- 76.1, for thermal recording apparatus or method for recording phenomenon.

SEE OR SEARCH CLASS:

- 219, Electric Heating, appropriate subclass for thermal recording heating elements.
- 359, Optics: Systems (Including Communication) and Elements, subclasses 290+ for light-controlled surface or interface.

- 360, Dynamic Magnetic Information Storage or Retrieval, subclass 59 for thermomagnetic recorders and recording of nondirectly visible image.
- 74.5 Magnetographic head:**
This subclass is indented under subclass 74.2. Subject matter wherein the specifics to the writing implement head are recited.
- 74.6 Magnetochemical or physical chemistry:**
This subclass is indented under subclass 74.2. Subject matter wherein the image is produced in a latent form by the interaction of the magnetic field with other physical or chemical effects other than ferromagnetization.
- SEE OR SEARCH CLASS:
430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclass for the product defined in terms of a composition.
- 74.7 Multiple color:**
This subclass is indented under subclass 74.2. Subject matter wherein an image is produced in a plurality of colors.
- 76.1 THERMAL RECORDING:**
This subclass is indented under the class definition. Subject matter wherein a phenomenon is recorded on a record receiver by a heated recording head or by a recording head through which an electrical heating current is transmitted to a conductive record receiver or transfer material.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
107.1+, for similar subject matter wherein the recording means is a laser.
- SEE OR SEARCH CLASS:
178, Telegraphy, subclass 94 for pyrographic telegraph code recorders.
347, Incremental Printing of Symbolic Information, subclasses 171+ for thermal marking apparatus and processes.
- 77** Records employing mechanisms for deforming a record receiver, as for example by slitting, tearing, bending, scratching, or embossing.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
78+, and see the notes thereto for printing, dotting, or punching markers.
- SEE OR SEARCH CLASS:
400, Typewriting Machines, subclasses 127+ for embossing type.
- 78** Recorders wherein the means for effecting the making of a record comprises a record receiver and an instrumentality cooperating therewith to print thereon, form dots thereon, or punch holes therethrough.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
9, for weight recorders using dotting, printing, or punching.
50, for plural function recorders using dotting, printing, or punching.
77, for making the record by deforming the receiver as by slitting, tearing, bending, scratching or embossing.
141+, for printing, dotting, or punching markers.
- SEE OR SEARCH CLASS:
83, Cutting, appropriate subclasses for means to cut or perforate.
178, Telegraphy, subclass 92 for telegraphic code indenting or perforating recorders.
234, Selective Cutting (e.g., Punching), appropriate subclasses for selective means to cut or perforate.
400, Typewriting Machines, subclasses 127+ for embossing or penetrating type.
- 79** This subclass is indented under subclass 78. Recorders of the type wherein an interconnection exists between the advancing mechanism for the record receiver and the means for moving the marker so that one moves concomitantly with the other either by reason of a common drive for the two or by reason of a drive connection between the two.
- 80** This subclass is indented under subclass 78. Recorders of the type wherein the instrumentalities make indications of clock time or indi-

- cate against a time scale the occurrence of an event.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 20, and see the notes thereto for timing subclasses of this class.
 94+, for elapsed time recorders.
- SEE OR SEARCH CLASS:
 235, Registers, subclass 377 and 378 for systems wherein a time record is sensed and the amount of time that has elapsed and a corresponding cost is determined.
 368, Horology: Time Measuring Systems or Devices.
- 81** This subclass is indented under subclass 80. Recorders of the type wherein the recording marker prints or punches time either by utilization of a time driven marker cooperative with a time dial scale or by utilization of characters themselves indicative of time.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 94+, for recorders which record total time elapsed rather than actual time.
- 82** This subclass is indented under subclass 81. Recorders of the type wherein the record is made on a card or equivalent receiver which card is normally an element entirely free of the machine but is used in conjunction therewith for the purpose of time recording thereon, the recorder having a record receiver opening particularly shaped to snugly receive the card.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 95+, for other discrete record receiving cards.
 134, and see the notes thereto for other card receivers.
- 83** This subclass is indented under subclass 82. Recorders of the type wherein means are provided to locate the card in different positions to receive nonsuperposed time records.
- 84** This subclass is indented under subclass 83. Recorders of the type wherein the locating means are a plurality of guides each guide
- determining a different position for the localization of the record.
- 85** This subclass is indented under subclass 83. Recorders of the type wherein the variable positioning means consists of means to modify a card as by notching thereof or punching holes therethrough, said notches or holes being adapted to cooperate with parts to control the new position of the card.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 96, for other card modifiers.
- 86** This subclass is indented under subclass 83. Recorders of the type wherein time controlled mechanism is employed to shift the card holder. This time controlled mechanism may be in addition to other manually operated card positioning mechanisms.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
 20, and see the notes thereto for other timing subclasses in this class.
- 87** This subclass is indented under subclass 81. Recorders of the type wherein the record receiver is movable toward the time markers to effect recording.
- 88** This subclass is indented under subclass 87. Recorders of the type wherein the time markers are either dials with time markers on them or indexes oriented with respect to time and intended to make marks on a scaled element.
- 89** This subclass is indented under subclass 81. Recorders of the type wherein the time marking characters are movable toward the record receiving mechanism to effect the making of the record.
- 90** This subclass is indented under subclass 81. Recorders of the type wherein the time marking characters are movable toward the record receiving medium to effect the making of the record and wherein time markers consist of dials with pointers or merely time driven pointers or dial markers.

- 91** This subclass is indented under subclass 81. Recorders of the type with special means to drive, align, or reset time character wheels.
- 92** This subclass is indented under subclass 91. Recorders of the type, with means to drive, align, or reset a time character marking pointer or marking dial.
- 93** This subclass is indented under subclass 80. Recorders of the type wherein the record receiver is a web.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
136, and see the notes thereto for other web subclasses.
- 94** This subclass is indented under subclass 78. Recorders of the type wherein the recording marker has register characters on it, or a pointer cooperating with a scale, and prints or punches the record receiving medium to record the value of the register reading. A register which is driven by clockwork and shows the total time elapsed rather than actual time is classified herein.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
54, 60 and 61, for other register character recorders.
81+, for recording actual rather than elapsed time.
- 95** This subclass is indented under subclass 94. Recorders of the type wherein the record receiving medium is a card, sheet or the like normally entirely free of the machine from the machine and is inserted into the machine at the time of making the record.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
82+, for other discrete record receiving cards.
134, and see the notes thereto for other card receivers.
- 96** This subclass is indented under subclass 95. Recorders of the type wherein means forming part of the machine are provided to so modify the discrete record receiving element so that
- upon the next insertion of the element it will be impossible to obtain a record superposed on a previous record.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
85, for other card modifiers.
- 97** This subclass is indented under subclass 94. Recorders of the type which register the number of fares collected and the number of passengers in a public conveyance.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
15+, for recorder combined with nonrecording fare register.
- SEE OR SEARCH CLASS:
235, Registers, subclasses 33+ for nonrecording fare registers.
- 98** This subclass is indented under subclass 94. Recorders of the type wherein special means are provided either to drive the printing or punching register, or parts thereof, or to reset the register.
- SEE OR SEARCH CLASS:
235, Registers, subclasses 47+ and 144 for register zero setting.
- 99** This subclass is indented under subclass 98. Recorders of the type wherein modifications in or on the card, control the setting of the register mechanism.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
134, and see the notes thereto for other card receivers.
- 100** This subclass is indented under subclass 78. Recorders of the type wherein the markings are punched and are made by a serrated or toothed rotating member.
- 101** This subclass is indented under subclass 78. Recorders of the type wherein a record is effected by the application to the record receiver of a recording element in the form of a helix any point of which may operate upon the record receiver.

- 102** This subclass is indented under subclass 78. Recorders of the type wherein the record is made upon a rotatable disc.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

137, and see the notes thereto for other disc receivers.

- 103** This subclass is indented under subclass 78. Recorders of the type wherein the record is made upon a rotatable drum.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

138, and see the notes thereto for other drum receivers.

- 104** This subclass is indented under subclass 78. Recorders of the type wherein the record is made upon a stationary planar record receiving element of any configuration.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

134, and see the notes thereto for other card receivers.

- 105** This subclass is indented under subclass 78. Recorders of the type wherein means are provided in the form of a sheet or ribbon to carry a pigment such as ink which may be transferred to the record receiver and means are provided to support or move said sheet or ribbon.

SEE OR SEARCH CLASS:

101, Printing, subclass 336 for ribbon inkers for printing apparatus.

400, Typewriting Machines, subclasses 91+ for ribbon mechanism.

462, Books, Strips, and Leaves for Mani-folding, subclasses 69+.

- 106** This subclass is indented under subclass 105. Recorders of the type wherein means are provided to coordinate the movement of the ink transfer support or moving means with the movement to effect marking.

107.1 LIGHT OR BEAM RECORDING:

This subclass is indented under the class definition. Subject matter wherein a phenomenon is recorded on a photosensitive or a heat sensitive medium by a light or stream of electrons.

- (1) Note. The light can be generated by an ambient or an artificial light source.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

74, for magnetographic recorders.

76.1, for thermal recording apparatus and processes.

150.1+, for electric recording apparatus and processes.

SEE OR SEARCH CLASS:

178, Telegraphy, subclass 15 for photographic recorders for automatic systems. Subclass 90 for miscellaneous photographic telegraph recorders.

250, Radiant Energy, subclasses 580+ for a recording detector responsive to invisible radiation generally.

347, Incremental Printing of Symbolic Information, subclasses 224+ for radiation marking apparatus and processes.

352, Optics: Motion Pictures, for motion picture recording apparatus employing photosensitive recording material.

355, Photocopying, appropriate subclasses for photocopying film strip or sheets where no other recording apparatus is involved.

358, Facsimile and Static Presentation Processing, subclass 302 for facsimile photographic recorders.

378, X-Ray or Gamma Ray Systems or Devices, appropriate subclasses particularly subclasses 167+ for X-ray devices using photographic detectors.

396, Photography, for photographic apparatus for recording images.

399, Electrophotography, subclasses 9+ for diagnostics, subclasses 38+ for controls, subclasses 130+ for image formation, subclasses 168+ for charging, subclasses 177+ for exposure, subclasses 222+ for development, subclasses 297+ for transfer, subclasses 320+ for fixing, subclasses

- 343+ for cleaning, and subclasses 361+ for document handling.
- 430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclasses for radiation imagery process and material.
- 107.2 Including camera:**
This subclass is indented under subclass 107.2. Subject matter including a light proof box fitted with a lens through an aperture of which the phenomenon is recorded on the medium.
- (1) Note. This subclass is distinguished from Class 396, Photography, because of a lack of a singular image plane or screen associated with individual photograph.
- SEE OR SEARCH CLASS:
396, Photography, for photographic apparatus for recording images.
- 107.3 Mirror galvanometer:**
This subclass is indented under subclass 107.1. Subject matter comprising electrical light deflecting means responsive to variations of the phenomenon for causing fluctuations in position of a beam of light to record the variations on the medium.
- SEE OR SEARCH CLASS:
324, Electricity: Measuring and Testing, subclass 97 for mirror galvanometers.
347, Incremental Printing of Symbolic Information, subclass 243, 259, and 260+ for a deflector used in a plural or singular beam scan recorder.
359, Optics: Systems (Including Communication) and Elements, subclass 196 for deflection using a moving element, subclass 223 for moving a reflective element.
- 107.4 Plural:**
This subclass is indented under subclass 107.3. Subject matter comprising at least two mirror galvanometers.
- SEE OR SEARCH CLASS:
359, Optics: Systems (Including Communication) and Elements, subclass 201 for plural moving scanning elements.
- 107.5 Having optical means interposed between the mirror galvanometer and the record receiver:**
This subclass is indented under subclass 107.3. Subject matter comprising light modifying device located between the mirror galvanometer and the medium to affect the formation of the record.
- (1) Note. The light modifying device includes, for example, mirror, lens, filter, light pipe, or masking means, etc.
- 107.6 Including record receiver or handling means therefor:**
This subclass is indented under subclass 107.1. Subject matter comprising details of the medium or means for feeding or transporting the medium.
- 111** Recorders wherein the record making instrumentality or marker writes a record by the application of pigment to the record receiver which instrumentality, while the changes in the phenomenon take place, is in direct continuous contact with the receiver.
- (1) Note. Where the marker only is movable during recording classification is in this subclass.
- SEE OR SEARCH CLASS:
33, Geometrical Instruments, subclasses 18.1+ for scribes.
178, Telegraphy, subclasses 18.01+ for telautographs.
- 112** This subclass is indented under subclass 111. Recorders of the type wherein both the receiver and marker are movable during the making of the record.
- 113** This subclass is indented under subclass 112. Recorders of the type wherein the marker movement and record receiver movement are interconnected.
- 114** This subclass is indented under subclass 112. Recorders of the type wherein there is provided a time driven web on which the record is made.

- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for other timing subclasses in this class.
136, and see the notes thereto for other web subclasses.
- 115** This subclass is indented under subclass 114. Recorders of the type wherein the marker is time driven and makes a mark of variable length proportional to elapsed time.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for other timing subclasses in this class.
- 116** This subclass is indented under subclass 112. Recorders of the type wherein there is a time driven web record receiver and the marker is pivoted on an axis to make a mark on the web, the marker not being capable of moving rectilinearly along the web.
- (1) Note. The marker itself may have a pivotal movement about one axis to move the plane of the web or may have a pivotal movement to move both to and in the plane of the web.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
119, 123 and 128, for other combinations in which the marker has pivotal motion only.
- 117** This subclass is indented under subclass 116. Recorders of the type wherein the marker is pivoted so as to enable the marker element to move only in the plane of the web to make a record.
- 118** This subclass is indented under subclass 112. Recorders of the type in which a web record receiver is driven from and proportional to the speed of a part of a machine under investigation.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
124, for work driven record receiving discs.
- 136, and see the notes thereto for other web subclasses.
- 119** This subclass is indented under subclass 118. Recorders of the type wherein the marker is moved pivotally to make a record. Includes markers responsive to phenomenon to move toward and from the web as well as in the plane of the web.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
116, 123 and 128, for other combinations in which the marker has pivotal motion only.
- 120** This subclass is indented under subclass 119. Recorders of the type wherein the movement of the marker is in the plane of the web only.
- 121** This subclass is indented under subclass 112. Recorders of the type in which the record receiving member is a time driven rotatable disc.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for other timing subclasses in this class.
137, and see the notes thereto for other disc receivers.
- 122** This subclass is indented under subclass 121. Recorders of the type wherein the disc is bodily displaceable as well as rotatable on an axis.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
126, for rotatable drums which are also bodily displaceable.
- 123** This subclass is indented under subclass 121. Recorders of the type in which a marker which is a pivotal movement only, makes the record on the disc. The pivotal movement may be about two axes.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
116, 119 and 128, for other combinations in which the marker has pivotal motion only.

- 124** This subclass is indented under subclass 112. Recorders of the type in which the record receiving member is a work driven rotatable disc.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
118+, for work driven record receiving webs.
137, and see the notes thereto for other disc receivers.
- 125** This subclass is indented under subclass 112. Recorders of the type wherein the record receiver is on a drum.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
138, and see the notes thereto for other drum receivers.
- 126** This subclass is indented under subclass 125. Recorders of the type in which the record receiving member is a drum capable of rotation on its axis and translation during the making of a record.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
122, for rotatable discs which are also bodily translatable.
- 127** This subclass is indented under subclass 125. Recorders of the type in which the record receiver is a time driven drum rotating on its axis.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
20, and see the notes thereto for other timing subclasses in this class.
- 128** This subclass is indented under subclass 127. Recorders of the type in which the marker has a pivotal motion, only, in order to make the record. The pivoting may be about an axis parallel to or at an angle to the plane of the record material on the drum or the pivoting may be about a plurality of axes.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
116, 119 and 123, for other combinations in which the marker has pivotal motion only.
- 129** This subclass is indented under subclass 112. Recorders of the type wherein the record receiver is a card, usually, though not always carried by a plane surface.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
134, and see the notes thereto for other card receivers.
- 130** This subclass is indented under subclass 111. Recorders of the type in which the record receiver, only, is movable during recording, the stylus being either fixed in position or adjusted to writing position or recording.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
114+, and 118+, for writers where both the web and marker move during the making of the record.
136, and see the notes thereto for other web subclasses.
- 131** This subclass is indented under subclass 130. Recorders of the type in which the record receiver is in the form of a rotatable disc.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
137, and see the notes thereto for other disc receivers.
- 132** This subclass is indented under subclass 130. Recorders of the type in which the receiver is in the form of a rotatable drum.
- SEE OR SEARCH THIS CLASS, SUB-CLASS:
138, and see the notes thereto for other drum receivers.
- 133** This subclass is indented under subclass 130. Recorders of the type in which the record receiver is a card usually though not necessarily mounted on a plane surface.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

134, and see the notes thereto for other card receivers.

- 134** The material on which the record is made and/or the driving means for the same.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

82+, 95+, 99, 104, 129, and 133, for various combinations classified on the basis of the use of a card receiver.

SEE OR SEARCH CLASS:

101, Printing, subclass 415.1 for means, per se, for securing flexible sheets to a base for holding and stretching the same even though disclosed for use with a recorder, and see the notes for related art.

135.1 Laminated, impregnated, or coated bases:

This subclass is indented under subclass 134. Subject matter wherein the record receiving has a base with a lamination thereon, or which is impregnated or coated with record receiving material.

- (1) Note. The material may have chart graduations or the like.

SEE OR SEARCH CLASS:

427, Coating Processes, subclasses 146+ for coating processes, per se, wherein the product has utility as a transfer or copy sheet.

428, Stock Material or Miscellaneous Articles, appropriate subclasses for a stock material product in the form of a plural layer web, sheet, or strand of general use, including a coated or impregnated stock material product, not elsewhere provided for, and especially subclasses 411.1+ for a non-structural plural layer product; see also the reference to Class 346 in Class 428, class definition, References to Other Classes.

430, Radiation Imagery Chemistry: Process, Composition, or Product, Thereof, subclasses 270.11+ for non-structural layered product having a

radiation sensitive composition layer claimed or solely disclosed as optically recordable and optically machine readable (e.g., optical recording media, etc.

- 136** This subclass is indented under subclass 134. Record receivers, the receiver being in the form of a web.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

28, 93, 114+, 118+, and 130, for various combinations classified on basis of use of a web form receiver.

SEE OR SEARCH CLASS:

226, Advancing Material of Indeterminate Length, appropriate subclasses for methods of, and apparatus for, feeding material without utilizing the leading or trailing ends to effect movement of the material.

242, Winding, Tensioning, or Guiding, subclasses 324+ for unwinding and rewinding a machine convertible information carrier such as a magnetic tape or image film.

428, Stock Material or Miscellaneous Articles, appropriate subclasses for a stock material product in the form of a single or plural layer web of general utility, and see the reference to Class 346 in Class 428, class definition, References to Other Classes.

451, Abrading, subclasses 296+ for a machine using an abrasive endless band and subclasses 526+ for abrasive endless band structure, per se.

- 137** This subclass is indented under subclass 134. Record receivers, the receiver being in the form of a disc.

SEE OR SEARCH THIS CLASS, SUB-CLASS:

102, 121+, 124, and 131, for various combinations classified on basis of use of a web form receiver.

SEE OR SEARCH CLASS:

428, Stock Material or Miscellaneous Articles, subclasses 64.1+ for single or plural layer sheet in the form of a disc

- or circular sheet of general utility and see the reference to Class 346 in Class 428, class definition, References to Other Classes.
- 138** This subclass is indented under subclass 134. Record receivers, the receiver being in the form of a drum.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
5+, 103, 125+, and 132, for various combinations classified on the basis of use of a drum type receiver.
- SEE OR SEARCH CLASS:
451, Abrading, subclasses 496+ and 504+ for a rotary cylinder type of abrader having sheet holding means.
- 139** The structure of the marker and or the driving means therefor.
- SEE OR SEARCH CLASS:
116, Signals and Indicators, subclasses 328+ for indicating pointer structure.
- 140.1 With ink supply to marker:**
This subclass is indented under subclass 139. Markers with means to supply ink thereto for subsequent application to the record strip.
- SEE OR SEARCH CLASS:
101, Printing, subclasses 335+ for printing apparatus inkers, particularly subclasses 364+ for fountains.
178, Telegraphy, subclass 96 for telegraphic code recorders having ink devices.
401, Coating Implements With Material Supply, appropriate subclasses for a hand-manipulated fountain pen.
- 141** This subclass is indented under subclass 139. Markers wherein the marker is of the printing, punching, or dotting type.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
78+, and see the notes thereto for recorders using dotting, printing, or punching markers.
- 142** This subclass is indented under subclass 141. Markers as in which the marker is in the form of a hand time stamp adapted to cooperate with a record receiver, said record receiver being an element not connected with the time stamp.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
20, and see the notes thereto for timing, subclasses of this class.
- SEE OR SEARCH CLASS:
101, Printing, subclasses 72+ for hand numbering stamps and other appropriate subclasses for hand printers.
- 143** This subclass is indented under subclass 139. Markers as which are hand driven.
- 144** The key or box used by a watchman or workman in the course of making a record.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
52, 56 and 63, for recorders operated or controlled by an element normally disconnected from the recorder.
- 145** The support for the recorder or a portion of a recorder.
- SEE OR SEARCH CLASS:
73, Measuring and Testing, subclass 431 for instrument casings.
248, Supports, for miscellaneous supports, per se.
- 146** Miscellaneous recorders not otherwise classifiable.
- 150.1 ELECTRIC RECORDING:**
This subclass is indented under the class definition. Subject matter wherein electricity is applied to the medium for recording a phenomenon.
- SEE OR SEARCH THIS CLASS, SUBCLASS:
74+, for magnetographic recorders.

SEE OR SEARCH CLASS:

- 118, Coating Apparatus, appropriate subclasses, especially subclasses 620+ for a coating device including means to apply electrical and/or radiant energy to work material or coating material, and see (2) Note of the class definition.
- 178, Telegraphy, subclass 62 for chemical and electrolytic telegraph recorders.
- 219, Electric Heating, subclass 384 for perforating by electric spark.
- 242, Winding, Tensioning, or Guiding, subclasses 210+ for winding and unwinding devices for apparatus for processing web material to bear machine-utilizable information representations.
- 330, Amplifiers, appropriate subclasses for the various types of amplifiers and amplifier systems, subclass 308 for transistor amplifiers having an atomic particles or radiant energy impinging on a semiconductor, and subclass 59 for amplifier systems having light controlled or activated device.
- 347, Incremental Printing of Symbolic Information, subclasses 111+ for electric marking apparatus and processes.
- 358, Facsimile and Static Presentation Processing, subclasses 296 through 304 for recorders combined with facsimile systems.
- 360, Dynamic Magnetic Information Storage or Retrieval, for the magnetic recording of nonvisible information; e.g., audio, video, digital information.
- 386, Television Signal Processing for Dynamic Recording or Reproducing, subclasses 1+ and 46+ for color and black and white television signal recording.
- 399, Electrophotography, subclasses 9+ for diagnostics, subclasses 38+ for controls, subclasses 130+ for image formation, subclasses 168+ for charging, subclasses 177+ for exposure, subclasses 222+ for development, subclasses 297+ for transfer, subclasses 320+ for fixing, subclasses 343+ for cleaning, and subclasses 361+ for document handling.

- 427, Coating Processes, for methods of development of the latent image.
- 430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, subclasses 25+ for the chemical process and material of electroimaging and magnetoimaging.

150.2 By electrical discharge (e.g., spark or electroerosion):

This subclass is indented under subclass 150.1. Subject matter wherein the phenomenon is recorded by dielectric breakdown.

- (1) Note. The dielectric breakdown may cause an electrical discharge from a stylus onto a medium by direct contact or through an air gap.

SEE OR SEARCH CLASS:

- 347, Incremental Printing of Symbolic Information, subclasses 159+ for electrical discharge marking apparatus and processes.

150.3 Electrochemical:

This subclass is indented under subclass 150.1. Subject matter wherein the phenomenon is recorded by reaction of a chemical (e.g., electrolyte) to the applied electricity.

SEE OR SEARCH CLASS:

- 347, Incremental Printing of Symbolic Information, subclasses 163+ for electrochemical marking apparatus and processes.

END